

AMENDMENTS TO THE CLAIMS:

Amend the claims as follows:

1. (Currently Amended) A propeller shaft arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller shaft arrangement comprising:

a propeller shaft (15) having at least a portion thereof provided with a spline (19) adapted to achieve a rotationally fixed connection with a corresponding spline located inside a hub of a corresponding propeller; and

said spline (19) on said propeller shaft (15) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15), said oblique angle (α) being sufficiently offset from parallel with said longitudinal axis of said propeller shaft (15) to resist compressive forces imposed by the corresponding spline located inside the hub of the corresponding propeller and axially aligned with said longitudinal axis of said propeller shaft (15).

2. (Currently Amended) The propeller shaft arrangement as recited in claim 1, wherein said oblique angle (α) is offset from parallel with said longitudinal axis of said propeller shaft (15) by at least 8.5 degrees ~~spline (19) is helically arranged on said propeller shaft (15)~~.

3. (Original) The propeller shaft arrangement as recited in claim 1, wherein said spline (19) is one of a plurality of splines (19), each of said plurality of splines (19) being oriented at the predetermined oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15).

4. (Original) The propeller shaft arrangement as recited in claim 1, wherein said propeller shaft (15) is one of a plurality of propeller shafts (15,16) having a common longitudinal axis, and each of said plurality of propeller shafts (15,16) having at least one spline (19,20) positioned thereupon and oriented at an oblique angle (α , β) with respect to the longitudinal axis.

5. (Original) The propeller shaft arrangement as recited in claim 4, wherein each of said at least one spline (19, 20) is helically arranged on the respective propeller shaft (15, 16).

6. (Currently Amended) ~~The propeller shaft arrangement as recited in claim 5,~~

A propeller shaft arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller shaft arrangement comprising:

a plurality of propeller shafts (15,16) having a common longitudinal axis, each of said plurality of propeller shafts (15,16) having at least one spline (19,20) positioned thereupon and oriented at an oblique angle (α , β) with respect to the longitudinal axis, wherein each of said at least one ~~helically arranged~~ spline (19, 20) is turned in a same direction, as viewed from the rear with respect to a direction of travel of a carrying vehicle, as an associated propeller would rotate to propel said propeller shaft arrangement in the direction of travel.

7. (Currently amended) ~~The propeller shaft arrangement as recited in claim 5,~~

A propeller shaft arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller shaft arrangement comprising:

a plurality of propeller shafts (15,16) having a common longitudinal axis, each of said plurality of propeller shafts (15,16) having at least one spline (19,20) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis, wherein said at least one spline (19, 20) on each of said propeller shafts (15, 16) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis of said propeller shafts (15, 16).

8. (Original) The propeller shaft arrangement as recited in claim 7, wherein each of said oblique angles (α, β), with respect to the longitudinal axis of said propeller shafts (15, 16), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive-motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (19, 20) of said resultant force (F_S) when drive-motor power is applied.

9. (Original) The propeller shaft arrangement as recited in claim 7, wherein orientations of said oblique angles (α, β), as measured with respect to the longitudinal axis of said propeller shafts (15, 16), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

10. (Currently Amended) A propeller arrangement having a hub (23) with a through-opening (24) and blades connected thereto, the propeller arrangement being adapted to be connected, via a propeller shaft (15) to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller arrangement comprising:

a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline located on a corresponding propeller shaft; and

said spline (25) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller (7), said oblique angle (α) being sufficiently offset from parallel with said longitudinal axis of said propeller (7) to resist compressive forces imposed by the corresponding spline located on the corresponding propeller shaft and axially aligned with said longitudinal axis of said propeller (7).

11. (Currently Amended) The propeller arrangement as recited in claim 10, wherein said oblique angle (α) is offset from parallel with said longitudinal axis of said propeller (7) by at least 8.5 degrees spline (25) is helically arranged on said propeller (7).

12. (Currently amended) The propeller arrangement as recited in claim 10, wherein said spline (25) is one of a plurality of splines (25), each of said plurality of splines (25) being oriented at the an predetermined oblique angle (α) of at least 8.5 degrees with respect to a longitudinal axis of said propeller (7).

13. (Original) The propeller arrangement as recited in claim 10, wherein said propeller (7) is one of a plurality of propellers (7, 8) having a common longitudinal axis, and each of said plurality of propellers (7, 8) having at least one spline (25, 28) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis.

14. (Currently Amended) The propeller arrangement as recited in claim 13, wherein each of said at least one spline (25, 28) oblique angles (α) is offset from parallel with said longitudinal axis of said propeller (7) by at least 8.5 degrees is helically arranged on the respective propeller (7, 8).

15. (Currently amended) The propeller arrangement as recited in claim 14,
A propeller arrangement having a hub (23) with a through-opening (24) and blades
connected thereto, the propeller arrangement being adapted to be connected, via a propeller
shaft (15) to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle
in a travel direction, the propeller arrangement comprising:

a plurality of at least two propellers (7, 8) having a common longitudinal axis, and each
of said at least two propellers (7, 8) adapted to achieve a rotationally fixed connection with a
corresponding spline (25, 28) positioned thereupon and oriented at an oblique angle (α, β) with
respect to the longitudinal axis, wherein each of said at least one spline (25, 28) on each of said
propellers (7, 8) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis
of said propellers (7, 8).

16. (Original) The propeller arrangement as recited in claim 15, wherein each of said oblique angles (α , β), with respect to the longitudinal axis of said propellers (7, 8), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive-motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (25, 28) of said resultant force (F_S) when drive-motor power is applied.

17. (Original) The propeller arrangement as recited in claim 15, wherein orientations of said oblique angles (α , β), as measured with respect to the longitudinal axis of said propellers (7, 8), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

18. (Currently amended) An adaptive arrangement having a through-opening (34) in a hub (33) thereof and the adaptive arrangement being configured to be interstitially positioned between a propeller (7) and a propeller shaft (15) which is coupled to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the adaptive arrangement comprising:

an adapter (30) having a through-opening (34) with at least a portion thereof provided with a spline (35), said spline (35) adapted to achieve a rotationally fixed connection with a corresponding spline located on a corresponding propeller shaft, and said spline (35) being oriented at an oblique angle (α) with respect to a longitudinal axis of said adapter (30), said oblique angle (α) being sufficiently offset from parallel with said longitudinal axis of said adapter (30) to resist compressive forces imposed by the corresponding spline located inside the hub of the corresponding propeller and axially aligned with said longitudinal axis of said adapter (30); and

an exterior of said adapter (30) being configured for rotationally fixed engagement with a corresponding propeller.

19. (Currently Amended) The adaptive arrangement as recited in claim 18, wherein said oblique angle (α) is offset from parallel with said longitudinal axis of said adapter (30) by at least 8.5 degrees ~~spline (35) is helically arranged on said adapter (30).~~

20. (Currently amended) The adaptive arrangement as recited in claim 18, wherein said spline (35) is one of a plurality of splines (35), each of said plurality of splines (35) being oriented at the a predetermined oblique angle (α) of at least 8.5 degrees with respect to a longitudinal axis of said adapter (30).

21. (Original) The adaptive arrangement as recited in claim 18, wherein said adapter (30) is one of a plurality of adapters (30, 31) having a common longitudinal axis, and each of said plurality of adapters (30, 31) having at least one spline (35, 38) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis.

22. (Original) The adaptive arrangement as recited in claim 21, wherein each of said at least one spline (35, 38) is helically arranged on the respective adapter (30, 31).

23. (Currently amended) ~~The adaptive arrangement as recited in claim 22,~~

An adaptive arrangement having through-openings (34, 37) in a hub (33) thereof and the adaptive arrangement being configured to be interstitially positioned between a propeller (7) and a propeller shaft (15) which is coupled to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the adaptive arrangement comprising:

a plurality of adapters (30, 31), each having a through-opening (34, 37) and a common longitudinal axis (30), and each of said plurality of adapters (30, 31) having at least one spline (35, 38) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis; and

said splines (35, 38) adapted to achieve a rotationally fixed connection with a corresponding spline located on corresponding propeller shafts, and wherein said at least one spline (35, 38) on each of said adapters (30, 31) is oriented at a different oblique angle (α, β) with respect to the longitudinal axis of said adapters (30, 31).

24. (Original) The adaptive arrangement as recited in claim 23, wherein each of said oblique angles (α, β), with respect to the longitudinal axis of said adapters (30, 31), is oriented such that a resultant force (F_S) between a tangential force component (F_T) of drive-motor-induced torque and a corresponding driving compressive force (F_R) is oriented at a substantially right angle to the respective receiving spline (35, 38) of said resultant force (F_S) when drive-motor power is applied.

25. (Original) The adaptive arrangement as recited in claim 23, wherein orientations of said oblique angles (α , β), as measured with respect to the longitudinal axis of said adapters (30, 31), are predetermined based on an expected cruising speed of a drive motor to be associated therewith on a carrying vehicle.

26. (Currently Amended) A propulsion arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion on a carrying vehicle in a travel direction, the propulsion arrangement comprising:

a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline (19) located on a corresponding propeller shaft (15), said spline (25) on said propeller (7) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller (7); and

said propeller shaft (15) having at least a portion thereof provided with said spline (19) adapted to achieve a rotationally fixed connection with the corresponding spline (25) located inside the propeller (7), said spline (19) of said propeller shaft (15) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15), said oblique angle (α) being sufficiently offset from parallel with said longitudinal axis of said propeller shaft (15) to resist compressive forces imposed by the corresponding spline located inside the hub of the corresponding propeller and axially aligned with said longitudinal axis of said propeller shaft (15).

27. (Currently Amended) The propulsion arrangement as recited in claim 26, wherein said oblique angle (α) is offset from parallel with said longitudinal axis of said propeller shaft (15) by at least 8.5 degrees ~~splines (19, 25) are helically arranged on said propeller shaft (15) and said propeller (7), respectively.~~

28. (Original) The propulsion arrangement as recited in claim 26, further comprising:

said propeller (7) being one of a plurality of propellers (7, 8) having a common longitudinal axis, and each of said plurality of propellers (7, 8) having at least one spline (25, 28) positioned thereupon and oriented at an oblique angle (α, β) with respect to the longitudinal axis;

said propeller shaft (15) being one of a plurality of propeller shafts (15, 16) having a common longitudinal axis, and each of said plurality of propeller shafts (15, 16) having at least one spline (19, 20) positioned thereupon and oriented at an oblique angle(α, β) with respect to the longitudinal axis; and

said splines (19, 20, 25, 28) being configured for mating engagement that fixes relative rotational movement between said propeller (7) and said propeller shaft (15) when drive-motor power is applied.

29. (New) The propeller shaft arrangement as recited in claim 1, wherein the oblique angle for the spline is at least 8.5 degrees.

30. (New) A multiple propeller shaft arrangement adapted to be connected to a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller shaft arrangement comprising:

a first propeller shaft (15) having at least a portion thereof provided with a spline (19) adapted to achieve a rotationally fixed connection with a corresponding spline located inside a hub of a corresponding propeller, said spline (19) being oriented at a first oblique angle (a) with respect to a longitudinal axis of said propeller shaft (15); and

a second propeller shaft (16) having at least a portion thereof provided with a spline (20) adapted to achieve a rotationally fixed connection with a corresponding spline located inside a hub of a corresponding propeller, said spline (20) being oriented at a second oblique angle (a) with respect to a longitudinal axis of said propeller shaft (16), wherein the drive motor operates the second propeller shaft in counter rotation with respect to the first propeller shaft, and wherein the first spline oblique angle has a different direction than that of the angle of the second spline oblique angle.

31. (New) A multiple propeller shaft arrangement as recited in claim 30, wherein said oblique angle (a) is offset from parallel with said longitudinal axis of said propeller shaft (15) by at least 8.5 degrees.

32. (New) A propeller arrangement having a hub (23) with a through-opening (24) and blades connected thereto, the propeller arrangement being adapted to be connected, via a propeller shaft (15) to an output shaft (11) of a drive motor (2) for causing propulsion of a carrying vehicle in a travel direction, the propeller arrangement comprising:

a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline located on a corresponding propeller shaft; and

said spline (25) being oriented at an oblique angle (a) with respect to a longitudinal axis of said propeller (7) and said spline (25) being turned in a same direction, as viewed from the rear with respect to a direction of travel of a carrying vehicle, as an associated propeller would rotate to propel said propeller shaft arrangement in the direction of travel.

33. (New) A propulsion arrangement adapted to be connected to an output shaft (11) of a drive motor (2) for causing propulsion on a carrying vehicle in a travel direction, the propulsion arrangement comprising:

a propeller (7) having at least a portion thereof provided with a spline (25) adapted to achieve a rotationally fixed connection with a corresponding spline (19) located on a corresponding propeller shaft (15), said spline (25) on said propeller (7) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller (7); and

said propeller shaft (15) having at least a portion thereof provided with said spline (19) adapted to achieve a rotationally fixed connection with the corresponding spline (25) located inside the propeller (7), said spline (19) of said propeller shaft (15) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller shaft (15), ** said spline (25) being oriented at an oblique angle (α) with respect to a longitudinal axis of said propeller (7) and said spline (25) being turned in a same direction, as viewed from the rear with respect to a direction of travel of a carrying vehicle, as an associated propeller would rotate to propel said propeller shaft arrangement in the direction of travel.